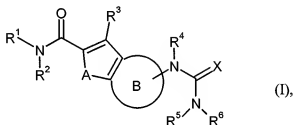


**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:****A. Claims**

1. (Currently Amended) A compound of the formula



in which

$R^1$  is 1-azabicyclo[2.2.2]oct-3-yl,

$R^2$  is hydrogen or  $C_1$ - $C_6$ -alkyl,

$R^3$  is hydrogen, halogen, amino, hydroxy or  $C_1$ - $C_6$ -alkyl,

$R^4$  is hydrogen,  $C_1$ - $C_6$ -alkyl which is optionally substituted by a radical selected from the group of hydroxy, halogen, cyano,  $C_1$ - $C_6$ -alkoxy, trifluoromethyl, trifluoromethoxy,

$R^5$  is hydrogen or  $C_1$ - $C_6$ -alkyl, or

~~$R^4$  and  $R^5$  together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_4$ -acyl, oxo-, thio-,~~

$R^6$  is (i) hydrogen, (ii)  $C_1$ - $C_6$ -alkyl, (iii)  $C_3$ - $C_8$ -cycloalkyl, (iv)  $C_6$ - $C_{10}$ -aryl, (v) 5- to 10-membered heteroaryl, (vi)  $C_6$ - $C_{10}$ -arylcarbonyl, where (ii) is optionally substituted by phenyl,  $C_1$ - $C_6$ -alkoxycarbonyl or  $C_1$ - $C_6$ -alkoxy, and (iv), (v) and (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_6$ -hydroxyalkyl, 3- to 8-membered heterocyclyl,  $C_6$ - $C_{10}$ -aryl, 5- to 10-membered heteroaryl, hydroxy, halogen, cyano,  $C_1$ - $C_6$ -alkoxy,  $C_1$ - $C_6$ -acyl, trifluoromethyl, trifluoromethoxy, nitro, amino,  $C_1$ - $C_6$ -alkylamino, or  $C_1$ - $C_6$ -acylamino, ~~or~~

~~$R^5$  and  $R^6$  together with the nitrogen atom to which they are bonded are a 3- to 10-membered heterocycle which is optionally substituted by  $C_1$ - $C_6$ -alkyl or  $C_1$ - $C_6$ -hydroxyalkyl,~~

A is oxygen, nitrogen or sulfur,

X is oxygen or sulfur,

the ring B is benzo or pyrido, each of which are optionally substituted by radicals from the series halogen, cyano, trifluoromethyl, trifluoromethoxy, nitro, amino,  $C_1$ - $C_6$ -alkyl and  $C_1$ - $C_6$ -alkoxy,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

2. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R<sup>1</sup> is 1-azabicyclo[2.2.2]oct-3-yl,

R<sup>2</sup> is hydrogen ~~or~~ C<sub>1</sub>-C<sub>6</sub>-alkyl,

R<sup>3</sup> is hydrogen, ~~halogen, amino, hydroxy or~~ C<sub>1</sub>-C<sub>6</sub>-alkyl,

R<sup>4</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl ~~which is optionally substituted by a radical selected from the group of hydroxy, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkoxy, trifluoromethyl, trifluoromethoxy,~~

R<sup>5</sup> is hydrogen ~~or~~ C<sub>1</sub>-C<sub>6</sub>-alkyl, ~~or~~

~~R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-acyl, oxo, thioxo,~~

R<sup>6</sup> is (i) hydrogen, (ii) C<sub>1</sub>-C<sub>6</sub>-alkyl, (iii) C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, (iv) C<sub>6</sub>-C<sub>10</sub>-aryl, (v) 5- to 10-membered heteroaryl, where (ii) is optionally substituted by phenyl, or C<sub>1</sub>-C<sub>6</sub>-alkoxy, and (iv) and (v) are optionally substituted by up to 3 radicals selected independently of one another from the group of C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl, 3- to 8-membered heterocyclyl, C<sub>6</sub>-C<sub>10</sub>-aryl, 5- to 10-membered heteroaryl, hydroxy, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, or C<sub>1</sub>-C<sub>6</sub>-acylamino, or

R<sup>5</sup> and R<sup>6</sup> together with the nitrogen atom to which they are bonded are a 3- to 8-membered heterocycle which is optionally substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl or C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl,

A is ~~oxygen, nitrogen or sulfur~~, and

X is ~~oxygen or sulfur~~, and

the ring B is ~~benzo or pyrido, each of which are optionally substituted by radicals from the series halogen, cyano, trifluoromethyl, trifluoromethoxy, nitro, amino, C<sub>1</sub>-C<sub>6</sub>-alkyl and C<sub>1</sub>-C<sub>6</sub>-alkoxy,~~

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

3. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R<sup>1</sup> is 1-aza-bicyclo[2.2.2]oct-3-yl,

R<sup>2</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl,

R<sup>3</sup> is hydrogen, halogen, amino, hydroxy or C<sub>1</sub>-C<sub>4</sub>-alkyl,

R<sup>4</sup> is hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl which is optionally substituted by a radical selected from the group of hydroxy, halogen, cyano, C<sub>1</sub>-C<sub>3</sub>-alkoxy, trifluoromethyl, trifluoromethoxy,

R<sup>5</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl, or

~~R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-acyl, exo, thioxo,~~

R<sup>6</sup> is (i) hydrogen, (ii) C<sub>1</sub>-C<sub>4</sub>-alkyl, (iii) C<sub>5</sub>-C<sub>6</sub>-cycloalkyl, (iv) phenyl, (v) 5- to 6-membered heteroaryl, (vi) C<sub>6</sub>-C<sub>10</sub>-arylcarbonyl, where (ii) is optionally substituted by phenyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl or C<sub>1</sub>-C<sub>3</sub>-alkoxy, and (iv), (v) and (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-hydroxyalkyl, 3- to 8-membered heterocyclyl, C<sub>6</sub>-C<sub>10</sub>-aryl, 5- to 10-membered heteroaryl, hydroxy, fluorine, chlorine, cyano, C<sub>1</sub>-C<sub>3</sub>-alkoxy, C<sub>1</sub>-C<sub>3</sub>-acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C<sub>1</sub>-C<sub>3</sub>-alkylamino, or C<sub>1</sub>-C<sub>3</sub>-acylamino, or

~~R<sup>5</sup> and R<sup>6</sup> together with the nitrogen atom to which they are bonded are a 3- to 10-membered heterocycle which is optionally substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl or C<sub>1</sub>-C<sub>3</sub>-hydroxyalkyl,~~

A ~~is oxygen or sulfur,~~

X ~~is oxygen,~~

~~the ring B is benzo or pyrido, each of which are optionally substituted by radicals from the series chlorine, fluorine, cyano, trifluoromethyl, trifluoromethoxy, amino, C<sub>1</sub>-C<sub>4</sub>-alkyl and C<sub>1</sub>-C<sub>4</sub>-alkoxy,~~

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

4. (Currently amended) A compound as claimed claim 1, of the formula (I) in which

R<sup>1</sup> ~~is 1-azabicyclo[2.2.2]oct-3-yl,~~

R<sup>2</sup> ~~is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl,~~

R<sup>3</sup> ~~is hydrogen, halogen, amino, hydroxy or C<sub>1</sub>-C<sub>4</sub>-alkyl,~~

$R^4$  is hydrogen or  $C_1-C_4$ -alkyl which is optionally substituted by a radical selected from the group of hydroxy,  $C_1-C_3$ -alkoxy, trifluoromethyl, trifluoromethoxy,

$R^5$  is hydrogen or  $C_1-C_4$ -alkyl, or

$R^4$  and  $R^5$  together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of  $C_1-C_6$ -alkyl,  $C_1-C_4$ -acyl, oxo, thioxo,

$R^6$  is (i) hydrogen, (ii)  $C_1-C_4$ -alkyl, (iii)  $C_3-C_6$ -cycloalkyl, (iv) phenyl, (v) 5- to 6-membered heteroaryl, where (ii) is optionally substituted by phenyl, and (iv) and (v) are optionally substituted by up to 3 radicals selected independently of one another from the group of  $C_1-C_4$ -alkyl,  $C_1-C_4$ -hydroxyalkyl, hydroxy, chlorine, fluorine, cyano,  $C_1-C_3$ -alkoxy,  $C_1-C_6$ -acyl, trifluoromethyl, trifluoromethoxy, amino,  $C_1-C_3$ -alkylamino, or  $C_1-C_3$ -acylamino, or

$R^5$  and  $R^6$  together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by  $C_1-C_3$ -alkyl or  $C_1-C_3$ -hydroxyalkyl,

A is oxygen, nitrogen or sulfur,

X is oxygen and

the ring B is benzo or pyrido, each of which are optionally substituted by radicals from the series chlorine, fluorine, cyano, trifluoromethyl, trifluoromethoxy, amino, C<sub>1</sub>-C<sub>4</sub>-alkyl and C<sub>1</sub>-C<sub>4</sub>-alkoxy,

and the solvates, salts or solvates of the salts of this compound.

or a solvate, a salt or a solvate of a salt thereof.

5. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R<sup>1</sup> is 1-azabicyclo[2.2.2]oct-3-yl,

R<sup>2</sup> to R<sup>4</sup> are hydrogen,

R<sup>5</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl, or

~~R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-acyl, exo-,thioxo,~~

R<sup>6</sup> is (i) hydrogen, (ii) C<sub>1</sub>-C<sub>4</sub>-alkyl, (iii) C<sub>5</sub>-C<sub>6</sub>-cycloalkyl, (iv) phenyl, (v) pyridyl, (vi) C<sub>6</sub>-C<sub>10</sub>-arylcarbonyl, where (ii) is optionally substituted by phenyl, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl or C<sub>1</sub>-C<sub>3</sub>-alkoxy, and (iv), (v) and (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-hydroxyalkyl, 3- to 8-membered heterocyclyl, C<sub>6</sub>-C<sub>10</sub>-aryl, 5- to 10-membered heteroaryl, hydroxy, fluorine, chlorine, cyano, C<sub>1</sub>-C<sub>3</sub>-alkoxy, C<sub>1</sub>-

C<sub>3</sub>-acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C<sub>1</sub>-C<sub>3</sub>-alkylamino, or  
C<sub>1</sub>-C<sub>3</sub>-acylamino, or

~~R<sup>5</sup> and R<sup>6</sup> together with the nitrogen atom to which they are bonded are a 3- to 10-~~  
~~membered heterocycle which is optionally substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl or C<sub>1</sub>-C<sub>3</sub>-~~  
~~hydroxylalkyl,~~

A is ~~oxygen or sulfur,~~

X is oxygen,

the ring B is benzo,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

6. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R<sup>1</sup> is 1-azabicyclo[2.2.2]oct-3-yl,

R<sup>2</sup> is hydrogen,

R<sup>3</sup> is hydrogen, chlorine, fluorine, amino or C<sub>1</sub>-C<sub>3</sub>-alkyl,

$R^4$  is hydrogen, methyl or ethyl, where methyl and ethyl are optionally substituted by a radical selected from the group of hydroxy, methoxy, ethoxy, trifluoromethyl, trifluoromethoxy, or

$R^4$  and  $R^5$  together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of  $C_1$ - $C_3$ -alkyl,  $C_1$ - $C_4$ -acyl, oxo, thioxo,

$R^5$  is hydrogen or  $C_1$ - $C_3$ -alkyl,

$R^6$  is (i) hydrogen, (ii)  $C_1$ - $C_4$ -alkyl, (iii) cyclopentyl, cyclohexyl, (iv) phenyl, (v) benzyl, (vi) phenethyl, where (iv) to (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of hydroxy, chlorine, fluorine, cyano, methoxy, ethoxy,  $C_1$ - $C_4$ -acyl, trifluoromethyl, trifluoromethoxy, amino,  $C_1$ - $C_3$ -alkylamino,

A is oxygen or sulfur,

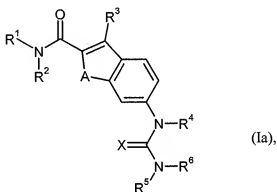
X is oxygen and

the ring B is benzo which is optionally substituted by radicals from the series chlorine, fluorine, cyano, trifluoromethyl, trifluoromethoxy,  $C_1$ - $C_4$ -alkyl, methoxy and ethoxy,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

7. (Currently amended) A compound of the formula



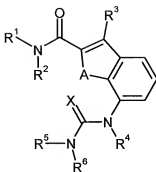
in which

$R^1$  to  $R^6$ , A and X have the meanings indicated in claim 1,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

8. (Currently amended) A compound of the formula



(Ib),

in which

R<sup>1</sup> to R<sup>6</sup>, A and X have the meanings indicated in claim 1,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

9. (Canceled)

10. (Canceled).

11. (Canceled).

12. (Canceled)

13. (Withdrawn, Previously presented) A medicament comprising at least one compound as claimed in claim 1 and at least one pharmaceutically acceptable, essentially nontoxic carrier or excipient.

14. (Withdrawn, Previously presented) A method for improving perception, concentration, learning and/or memory comprising administering to a human or animal an effective amount of a compound of claim 1.
15. (Withdrawn, Previously presented) A method for the treatment and/or prophylaxis of impairments of perception, concentration, learning and/or memory comprising administering to a human or animal an effective amount of a compound of claim 1.
16. (Withdrawn, Previously presented) A method for the treatment and/or prophylaxis of impairments of perception, concentration, learning and/or memory comprising administering to a human or animal an effective amount of a medicament of claim 13.
17. (Canceled)